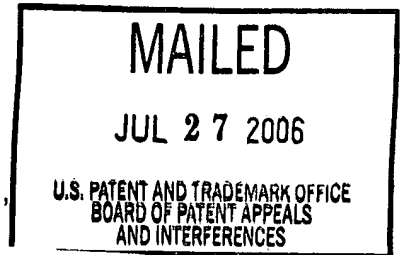


The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte HARTWIG SCHLESIGER,
MARTIN MORNING, GUNTER WEBER,
VOLKER ECKHARDT, GERD SONNENBERG,
and RENE KIESEWETTER



Appeal No. 2006-1973
Application No. 09/785,905

ON BRIEF

Before ADAMS, GREEN, and LEOVITZ, Administrative Patent Judges.

LEOVITZ, Administrative Patent Judge.

REMAND TO THE EXAMINER

Our consideration of the record leads us to conclude that this case is not in condition for a decision on appeal. As explained in more detail below, there are certain facts missing from the record which prevent us from reaching a final determination on the merits of the rejection under 35 U.S.C. § 103. Accordingly, we remand the application to the examiner to consider the following issues and to take appropriate action.

Claim construction

Claims 1-8 are on appeal. Claim 1 is the sole independent claim involved in this appeal. It reads as follows:

Claim 1. A process for producing particulate water-soluble cellulose derivatives, comprising:

- a) forming a feed composition comprising a cellulose derivative, and 50 wt. % to 80 wt. % of water, based on the total weight of the feed composition, wherein the cellulose derivative is at least one of swelled and dissolved in the feed composition;
- b) contacting, in a high rotational speed gas jet impact mill, the feed composition with a superheated gas mixture selected from (i) a superheated gaseous mixture of steam and an inert gas, and (ii) a superheated gas mixture of steam and air, thereby converting the cellulose derivative of the feed composition into a solid state form of finely particulate particles, wherein the superheated gas mixture has a steam content of 40 wt. % to 99 wt. %, based on the total weight of the superheated gas mixture;
- c) separating the particulate cellulose derivative from the superheated gas mixture; and
- d) optionally drying the particulate cellulose derivative.

The claim has four basic steps. First, a feed composition is formed which contains a cellulose derivative with 50-80% by weight ("wt. %") of water. Second, the feed composition is contacted with a superheated gas mixture in a high rotational speed gas jet impact mill. Contact with the superheated gas mixture in the impact mill converts the cellulose derivative into a solid state of "finely particulate particles." Third, the particulate is separated from the gas mixture. Finally, there is an optional step in which the particulate cellulose is dried.

Our claim construction centers on the second step of the claimed method since this is the focus of the dispute between the examiner and Appellant. In this step b), there is "contacting" between the feed composition and the "superheated gas mixture." The contact occurs in a "high rotational speed gas jet impact mill."

Although the term "contacting" is not expressly defined, the patent application describes how a superheated gas mixture of the claimed ratio is produced inside the impact mill. The claim requires that the steam content of the gas mixture be "40 wt % to 99 wt %." This ratio, according to the specification, is achieved as follows:

The inert gas or air is added in a ratio relative to the fed vaporized water of 1:99 parts by weight to 60:40 parts by weight, preferably in a ratio of 3:97 parts by weight to 40:60 parts by weight, particularly preferably in a ratio of 5:95 parts by weight to 30:70 parts by weight. The fed water is added via the dissolved and/or swollen cellulose derivative and is evaporated in the mill drying procedure, or is fed directly into the mill in the form of water or steam.

Specification, page 12, line 27-page 13, line 1.

From this description, we can identify three process variants for forming the superheated gas mixture: 1) by evaporating water from the cellulose feed composition that is already inside the impact mill ("fed water is added via the dissolved and/or swollen cellulose"); 2) by directly adding water into the impact mill; or 3) by directly feeding steam into the impact mill. In the first process, the steam is formed in situ by vaporizing the water from the cellulose feed composition. The second process introduces water into the mill, but requires a step where the water is converted to steam inside the mill. Only in the third process variant is the steam directly delivered to the impact mill from the outside. The specification also lists formula for determining how much steam is present in the mill, depending on which process variant is utilized. Id.,

page 13, lines 1-15. In sum, the written description indicates that “contact” of the gas mixture with the cellulose feed composition can occur by delivering steam and air or inert gas into the mill, or by forming the steam inside the mill, where it is mixed with the air or inert gas.

Consistent with the written description, we construe the term “contacting” to mean processes in which the gas mixture is placed in the presence of the feed composition. This includes procedures where the mixture is fed into the contact mill, or where it is formed in situ. Since we are not supposed to import limitations from the specification into the claims, we do not limit the claims to the specific process variants disclosed in the specification. Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1204, 64 USPQ.2d 1812, 1819 (Fed. Cir. 2002).

Obviousness, 35 U.S.C. § 103

Claims 1-8 under 35 U.S.C § 103(a) stand rejected as being unpatentable over Weber¹ in view of Bujara².

According to the specification, after cellulose derivatives are produced by chemical reactions, they have structures which make them unsuitable for commercial use. Specification, page 1, lines 14-20. It is necessary to adjust their grain size, bulk density, dryness, and viscosity in order to covert them into commercially useful products. Id., page 1, lines 20-25. Different prior art approaches to processing

¹ Weber et al. (Weber), WO 98/31710, published July 23, 1998. All references to Weber are with respect to the English translation of WO 98/31710 which was originally published in the German language.

² Bujara et al. (Bujara), GB 2,262,527, published June 23, 1993.

cellulose derivatives are described in the specification, including the cited Bujara publication. Id., page 3, line 14.

The cited Weber³ publication, like Bujara and the present application, describes methods for preparing cellulose particulates. Because these references represent analogous art in the same technology field, the person or ordinary skill would reasonably been expected to look to them. In addition to the motivation-suggestion-teaching test, “a related test--the ‘analogous art’ test-- has long been part of the primary Graham analysis articulated by the Supreme Court. See Dann, 425 U.S. at 227-29, 96 S.Ct. 1393; Graham, 383 U.S. at 35, 86 S.Ct. 684. The analogous-art test requires that the Board show that a reference is either in the field of the applicant's endeavor or is reasonably pertinent to the problem with which the inventor was concerned in order to rely on that reference as a basis for rejection. In re Oetiker, 977 F.2d 1443, 1447 (Fed. Cir. 1992).” In re Kahn, 441 F.3d 977, 986-987, 78 USPQ2d 1329, 1335-1336 (Fed. Cir. 2006).

The examiner argued that Weber describes a process that is roughly similar to the claimed method, where a superheated vapor that contains a mixture of solvents is utilized to produce a particulate cellulose derivative. Answer, page 4. The only difference between Weber and the claimed subject matter, according to the examiner, is that Weber does not use an impact mill of the type recited in the claims. Id., page 5, lines 1-7. Bujara was relied upon in the rejection to make up for this deficiency for its

³ We could not find a WO that matched the number “WO 98/907931” disclosed on page 3 of the specification, leading us to believe that this application number contains an error. We also note that its description in the specification is identical to the disclosure in Weber, suggesting that it may be a related application.

teaching of an impact mill. Id.

Appellant challenged the rejection, stating: “Weber et al does not disclose, teach or suggest performing their solid state conversion step using a superheated gas mixture of steam-inert gas or steam-air, having a steam content of 40 to 90⁴ wt.%.” Brief, page 4.

After studying the Weber publication, we concur with the examiner that Weber describes a superheated gas mixture that contains a mixture of gas components. However, as argued by Appellant, we cannot find any disclosure or suggestion in the cited references of the claimed combinations (steam/air or steam/inert gas) in the claimed proportions.

Weber’s disclosure on page 4, lines 14-28, discloses the use of a vapor which is a mixture of more than one gaseous component:

[the polysaccharide soaked in a solvent or mixed solvent] is either converted into the solid state in a dryer-pulveriser in such a way that, synergistically, on the one hand the solvent or mixed solvent contained in the soaked or dissolved polysaccharide derivative is converted into the vapour phase by means of the superheated vapour of the corresponding, or of a different, solvent or mixed solvent, and on the other hand, the dissolved or soaked polysaccharide derivative is converted into the solid by phase transition, the change in form of the polysaccharide derivatives in these processes taking place as a result of the superimposition of external forces (steam mill drying), or discrete particles are produced by dispersion in a surrounding medium which does not dissolve them and, in subsequent comminuting, filtration and drying steps, these particles are processed into pulverulent solid particles having the required particle size and properties ... (Emphasis added.)

Our understanding of the underlined passage is that the “superheated vapour” can be comprised of a single solvent or of a mixed solvent. The solvents are described by Weber on page 7, lines 1-6, to include at least five different solvent classes (polar,

hydrocarbons, halogenated hydrocarbons, alcohols, and esters) and six examples (water, methanol, ethanol, isopropanol, ethyl acetate, and butyl acetate) of a specific solvent. This disclosure alone, or in combination with Bujara, is insufficient to render obvious the claimed subject matter. Weber does not describe or suggest the specific combination of water and air, or water and an inert gas. For instance, the examiner did not make any finding that one of the listed solvents, when superheated, would be characterized as an “inert gas,” as required by the claims.

In regards to the recited ratio of “40 wt % to 99 wt %,” the examiner stated that Weber “teaches ranges of the superheated solvent, (see page 7, lines 28-32).” Answer, page 4, lines 21-22. However, the Weber disclosure relied upon by the examiner refers to the percentage of solvent that is mixed in with the solid cellulose component, not the ratio of the solvents in the superheated gas.

To establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicants. See, e.g., In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1316-1317 (Fed. Cir. 2000). No motivation was provided by the examiner to have picked the claimed combination of steam/air or steam/inert gas from the list of solvents disclosed by Weber. Moreover, we find that the examiner’s reason for concluding that the claimed limitation of “40 wt. % to 99 wt. %” is obvious is not supported by the facts found in Weber. For these reasons, we cannot sustain the rejection on this ground.

⁴ The claims state “99 wt. %.” We assume the reference to the number “90” is an error.

But this is not enough to dispose of this appeal. The examiner also contended that the conditions utilized in either Weber or Bujara would result in a gas mixture that met the limitations of the claims. Answer, page 8. Although the examiner did not expressly say it, this aspect of the rejection raises an issue of inherency, i.e., would the prior art conditions have inherently produced a gas mixture that meets the claim limitations. Although inherency was never explicitly stated, Appellant clearly understood the examiner's argument and responded appropriately.

The examiner stated:

Since the prior art reference of Bujara et al. teach of employing a gas stream having a temperature up to 250°C, the water content of the gelled cellulose derivative is evaporated from the cellulose derivative. In addition, during this evaporation step the water molecules of steam are obviously mixed with air during this drying step, thus rendering the instantly claimed subject matter obvious.

Id., page 8.

Appellant replied, stating:

Appellants respectfully submit that the Examiner has mischaracterized Bujara et al, in particular with regard to his contention that Bujara et al discloses or suggest that contact between the heated gas stream and the cooled-gelled cellulose compound would result in the formation of a superheated mixture of gasses. Upon contact with the cooled-gelled cellulose compound of Bujara et al, the heated gas stream is dramatically cooled, as would be recognized by a skilled artisan. As such, the resulting mixture of gasses, if any, would not be superheated.

Brief, page 5.

We agree with the examiner to the extent that it would be reasonably expected that the hot air utilized in Bujara's process would vaporize water from the cellulose composition, producing a quantity of steam in the chamber. As already discussed,

Appellant describes in their patent application the production of steam inside the impact mill by evaporating water from the cellulose composition. Specification, page 12, line 30-Page 13, line 1; page 11, lines 4-15. This is the same event that the examiner has proposed to occur in Bujara when heated gas is pumped into the impact mill. We see no difference between Bujara's activity and Appellant's process. Both would result in the in situ production of steam. The term "contacting" in claim 1, as we have construed it, does not require the steam to be fed into the impact mill.

Appellant's argument that the gas would be "dramatically cooled" by the cooled-gel cellulose is not persuasive. Brief, page 5, line 20. Appellant provided no evidence to substantiate its position, but relied only conclusory statements made by the attorney. Arguments of counsel cannot take the place of evidence lacking in the record. Estee Lauder Inc. v. L'Oreal, S.A., 129 F.3d 588, 593, 44 USPQ2d 1610 (Fed. Cir. 1997).

Furthermore, there is no evidence in the record⁵ concerning the meaning of "superheated" (e.g., the temperature range) that would allow us to determine the propriety of Appellant's assertion that a superheated gas in contact with a cooled gel "would not be superheated." Brief, page 5, line 21. The first step in an obviousness analysis is to determine the meaning and scope of each claim. Amazon.com, Inc. v. Barnes and noble.com, Inc., 239 F.3d 1343, 1351, 57 USPQ2d 1747, 1752 (Fed. Cir. 2001). "Only when a claim is properly understood can a determination be made whether the claim . . . renders obvious the claimed invention." Id. For this reason, upon

⁵ The examiner cited the Encyclopedia of Chemical Technology for its discussion of steam, but the reference (pages 719-720) was not provided with the Answer nor could we find a copy of it in the prosecution history.

remand, the examiner should make a specific finding about the meaning and scope of that term.

The amount of steam present in Bujara's hot air must also be sufficient to meet the claim limitation of "a steam content of 40 wt % to 99 wt %." The examiner provided no findings with regard to this specific limitation. For example, we have no information on the size of the impact mill (i.e., how much volume it could hold) or the amount of cellulose composition present in it. Upon return of the application, the examiner should specifically address this issue. We note that Appellant's specification provided a formula for making such a calculation. Specification, page 13, lines 12-15.

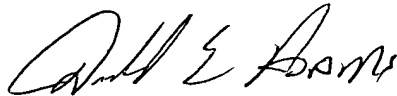
Weber is the flipside of Bujara. In Weber, the cellulose composition is contacted with steam. Since this process is not described as being performed in a vacuum, it would be expected that Weber's steam would mix with air present in the mill chamber. Claim 1 requires that the steam have a content of 1 wt. % to 60 wt % of air (i.e., "40 wt. % to 99 wt. %" of steam). Appellant admitted that steam contains about 0.08 wt. % of other gases. Brief, page 4, ¶4. Thus, only an additional 0.02 wt % of air is apparently necessary to reach the 1% threshold. Even though this value appears de minimus, we have no information about the size of the chamber (e.g., how much air is present in it) or any other parameters to make a determination. Upon return of the application, the examiner should specifically address this issue.

Summary

This case is remanded for further consideration by the examiner consistent with this opinion.

This application, by virtue of its "special" status, requires an immediate action. MPEP § 708.01(D) (8th ed., rev. 3, August 2005). It is important that the Board be informed promptly of any action affecting the appeal in this case.

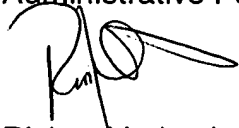
REMANDED



Donald E. Adams
Administrative Patent Judge



Lora M. Green
Administrative Patent Judge



Richard Lebovitz
Administrative Patent Judge

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